



GAIL FARBER, Director

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
<http://dpw.lacounty.gov>

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE

REFER TO FILE:

WM-0

March 17, 2014

TO: Each Supervisor

FROM: Gail Farber *Gail Farber*
Director of Public Works

REPORT ON JUNE 25, 2013, MOTION ON PROPOSED CLEAN WATER, CLEAN BEACHES PROGRAM

At the conclusion of the Public Hearing held on June 25, 2013, the Board directed the Chief Executive Office and Public Works to take a number of actions (Attachment A) and collaborate with the Los Angeles County Sanitation Districts (LACSD) and other sewer operators in Los Angeles County to evaluate regional-level methods to address the treatment of urban runoff.

We have prepared the attached report titled "Report on Treatment of Urban Runoff and Governance of Los Angeles County Sanitation Districts" (Attachment B), which summarizes our findings. The report provides a background on treatment of urban runoff through the use of sanitary sewer systems and policies and practices in place for treatment of urban runoff by LACSD. In addition, the report provides a description of the governance structure of the LACSD and a comparison of the governance structure previously proposed by the Clean Water, Clean Beaches Program.

The Board further directed Public Works to work with State and Federal agencies on other funding sources, including bonds, existing revenue, and other proposals. We have been working with State and Federal governments on funding opportunities for stormwater treatment directly and through professional organizations on a national level. We have been doing this continually since the inception of the Municipal Separate Storm Sewer System Permits. Attachment C summarizes the funding opportunities recently made available or ongoing.

Each Supervisor
March 17, 2014
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If you have any questions, please contact me at (626) 458-4002 or your staff may contact Mark Pestrella, Assistant Director, at (626) 458-4001 or at mpestrella@dpw.lacounty.gov.

PKD:sw

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Attach.

cc: Chief Executive Office (Rita Robinson)
County Counsel
Executive Office



STATEMENT OF PROCEEDINGS FOR THE
REGULAR MEETING OF THE BOARD OF SUPERVISORS
OF THE COUNTY OF LOS ANGELES HELD IN ROOM 381B
OF THE KENNETH HAHN HALL OF ADMINISTRATION
500 WEST TEMPLE STREET, LOS ANGELES, CALIFORNIA 90012

Tuesday, June 25, 2013

9:30 AM

S-1. 11:00 a.m.

Report by the Department of Public Works on the progress regarding what has been completed on the Clean Water/Clean Beaches Project, as requested by the Board at the meeting of March 12, 2013. (Continued from meeting of 6-11-13) (13-2720)

Sonny Brubach, Elizabeth Crosson, Joyce Dillard, Kirsten James, Jack Rolston, Arnold Sachs and Kathleen Trinity addressed the Board.

Phil K. Doudar, Principal Engineer, Department of Public Works, presented a report. Mark Pestrella, Assistant Director, Department of Public Works, responded to questions posed by the Board.

Supervisor Ridley-Thomas made a motion, seconded by Supervisor Knabe, to:

- 1. Send a five-signature letter to the Executive Officer of the Sanitation Districts of Los Angeles County requesting their collaborative participation to:**

- Evaluate, on a regional level, methods to address the treatment of urban runoff;**

- Assess the governance system of the Sanitation Districts as a potential model to improve storm water and urban runoff quality; and**

- 2. Direct the Chief Executive Officer, in coordination with the Director of Public Works to:**

-
- Collaborate with the Sanitation Districts of Los Angeles County, County Counsel, and other stakeholders;
 - Identify and outreach to other water suppliers and conveyers who should be a core participant in the development of a comprehensive approach to address urban runoff and storm water concerns; and
 - Report back to the Board within 120 days in writing with their findings.

Supervisor Yaroslavsky made a friendly amendment to Supervisor Ridley-Thomas' motion to include "and other Executive Officers of Sanitation Districts and Sewer Operators in the County." Supervisor Ridley-Thomas accepted Supervisor Yaroslavsky's friendly amendment.

Supervisor Antonovich made a friendly amendment to Supervisor Ridley-Thomas' motion to direct the Director of Public Works to work with the State and Federal Governments on other sources of funds, including bonds, existing revenues and other proposals. Supervisor Ridley-Thomas accepted Supervisor Antonovich's friendly amendment.

After discussion, on motion of Supervisor Ridley-Thomas, seconded by Supervisor Knabe, the Department of Public Works' report was received and filed, and the Board approved the following actions to:

1. Send a five-signature letter to the Executive Officer of the Sanitation Districts of Los Angeles County and other Executive Officers of Sanitation Districts and Sewer Operators in the County requesting their collaborative participation to:
 - Evaluate, on a regional level, methods to address the treatment of urban runoff; and
 - Assess the governance system of the Sanitation Districts as a potential model to improve storm water and urban runoff quality;
2. Direct the Chief Executive Officer, in coordination with the Director of Public Works to:
 - Collaborate with the Sanitation Districts of Los Angeles County, County Counsel, and other stakeholders;

- Identify and outreach to other water suppliers and conveyers who should be a core participant in the development of a comprehensive approach to address urban runoff and storm water concerns; and
 - Report back to the Board within 120 days in writing with their findings; and
3. Direct the Director of Public Works to work with the State and Federal Governments on other sources of funds, including bonds, existing revenues and other proposals.

Ayes: 5 - Supervisor Molina, Supervisor Yaroslavsky, Supervisor Knabe, Supervisor Antonovich and Supervisor Ridley-Thomas

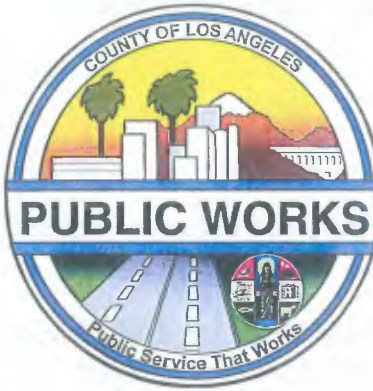
Attachments: [Report](#)
[Motion by Supervisor Ridley-Thomas](#)
[Report](#)
[Video 1](#)
[Audio 1](#)
[Video 2](#)
[Audio 2](#)
[Video 3](#)
[Audio 3](#)

The foregoing is a fair statement of the proceedings for the meeting held June 25, 2013, by the Board of Supervisors of the County of Los Angeles and ex officio the governing body of all other special assessment and taxing districts, agencies and authorities for which said Board so acts.

Sachi A. Hamai, Executive Officer
Executive Officer-Clerk
of the Board of Supervisors

By 

Sachi A. Hamai
Executive Officer



County of Los Angeles Department of Public Works

Report on Treatment of Urban Runoff and Governance of Los Angeles County Sanitation Districts

January 1, 2014

**Gail Farber
Director of Public Works**

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Executive Summary

Regulatory Background

The 1972 Federal Water Pollution Control Act, commonly known as the Clean Water Act, established the National Pollutant Discharge Elimination System (NPDES) Permit program to regulate the discharge of pollutants from "traditional" point sources, such as sanitary sewer treatment plants and industries. In 1987 the Clean Water Act was amended to expand the NPDES Permit program to encompass the much more complex and difficult to control discharges of stormwater and urban runoff from Municipal Separate Storm Sewer Systems (MS4s). In 1990 the U.S. Environmental Protection Agency established Phase I of the NPDES stormwater permitting program, requiring MS4s with population of 100,000 or more to obtain permits for discharges of stormwater to waters of the United States. Since the County of Los Angeles and the cities operate MS4s, they are required to obtain NPDES Permits under the Clean Water Act.

In California, the NPDES Permit is administered by the State Water Resources Control Board and nine Regional Water Quality Control Boards. The California Regional Water Quality Control Board, Los Angeles Region (Regional Board), administers the NPDES Permit program in Los Angeles County. To date, there have been four MS4 permits issued to Los Angeles County and cities therein. The first MS4 permit was issued in 1990, followed by the second in 1996, and the third in 2001. The fourth and current permit was issued in December 2012.

The current MS4 permit has four fundamental requirements: (i) prohibits the discharges of nonstormwater (dry-weather urban runoff) to receiving waters, (ii) requires implementation of minimum control measures to reduce the discharge of pollutants to the maximum extent practicable, (iii) requires compliance with Total Maximum Daily Load (TMDL) provisions to restore impaired water bodies, and (iv) requires discharges not to cause or contribute to exceedances of water quality standards in the receiving water. In the current Los Angeles County Permit, there are 33 TMDLs, covering many water bodies, the largest number of TMDLs in a single county in the nation.

Considering the high cost to address stormwater and nonstormwater pollution, such as urban runoff, the Los Angeles County Flood Control District embarked on a regional parcel fee initiative to provide sustained funding to municipalities in Los Angeles County. However, during public hearings, significant concerns were raised by stakeholders, such as public schools, businesses, some municipalities, and the general public, which prompted the County of Los Angeles Board of Supervisors to explore other means to finance stormwater pollution projects and programs.

On June 25, 2013, the County of Los Angeles Board of Supervisors passed a motion directing the County of Los Angeles Department of Public Works to engage the Los Angeles County Sanitation Districts and other sewer operators to evaluate

methods to address the treatment of urban runoff, which is only one component of pollution, and also to assess the governance system of the Los Angeles County Sanitation Districts as a potential model for a program to improve stormwater and urban runoff quality.

The Governance Structure of the Los Angeles County Sanitation Districts

The Los Angeles County Sanitation Districts is comprised of 23 individual districts. Each district of the Los Angeles County Sanitation Districts is a separate legal entity with the authority to own and operate sewerage and refuse waste conveyance, treatment, and disposal systems. The Los Angeles County Sanitation Districts does not have a legal authority to collect and treat storm flows. Similar to the stormwater program proposed under the Clean Water, Clean Beaches Program, the district boundaries of the Los Angeles County Sanitation Districts are primarily established by their tributary hydrologic drainage area rather than political boundaries, and its governance is led by municipal stakeholders.

The governing body of each district within the Los Angeles County Sanitation Districts is a board of directors comprised of the mayor of each city located in the district. If the district includes unincorporated areas of Los Angeles County, the Chairperson of the County of Los Angeles Board of Supervisors is the assigned representative on that district's board of directors, with the County of Los Angeles Supervisor of the local Supervisorial District assigned as an alternate director. The Amended Joint Administration Agreement provides for a single and centralized administrative organization for dealing with various joint administrative, operation, and maintenance functions. District No. 2, on behalf of all of the Los Angeles County Sanitation Districts, is the appointed agent for providing the joint administration.

Similarly, a Joint Outfall Agreement among certain districts provides for the operation and maintenance of common regional infrastructure, like treatment plants, with each district of the Los Angeles County Sanitation Districts contributing its prorated share of the expenses. This provides for efficient, cost-effective management of the Los Angeles County Sanitation Districts infrastructure.

The Los Angeles County Sanitation Districts is financed through collection of fees levied on property tax rolls and through direct billing of industrial waste discharges, and the rates may vary by each district. Adjusting the rate is subject to the applicable provisions of Proposition 218, which requires appropriate notices and a public hearing, but not an election. Government facilities and schools are exempt from connection fees and annual charges under the Los Angeles County Sanitation Districts Connection Fee Ordinance.

The Los Angeles County Sanitation Districts governance is somewhat similar to that proposed under the Clean Water, Clean Beaches Program, as there are multiple municipalities involved in subgroups based on hydrologic boundaries. However, unlike the Clean Water, Clean Beaches Program, the Los Angeles County Sanitation Districts are governed solely by elected members designated by statute.

Additionally, the Los Angeles County Sanitation Districts regularly interact with other stakeholders, such as environmental groups, but not in the same format as proposed under the Clean Water, Clean Beaches Program.

Developing a governance structure similar to that of the Los Angeles County Sanitation Districts for stormwater pollution-related matters will require new authorities under State law and various joint powers agreements.

Urban Runoff Flows

By definition, urban runoff is nonstormwater flows that are generated in urban areas due to overirrigation, broken sprinkler systems, fire hydrant testing, car washing, and other sources. Since urban runoff carries pollutants that are typically present on landscape and streetscape such as trash, metals, dissolved nutrients, and bacteria, it is considered a source of pollution.

The Los Angeles County Sanitation Districts, the Las Virgenes Municipal Water District, and the City of Los Angeles Bureau of Sanitation provide wastewater treatment to over 90 percent of Los Angeles County. These agencies have the authority to collect and treat urban runoff as wastewater. Further, they have accepted the introduction of urban runoff for treatment on a limited basis within their treatment facilities. The process generally involves the construction of a connection between storm drains and sewer lines, along with associated pump stations, power supply, and control systems.

Currently, there are 41 such connections in Los Angeles County primarily located along the Santa Monica Bay. This represents treatment of a small fraction of the total annual urban runoff in Los Angeles County.

It is expected that the demand for these connections by municipalities will increase tremendously in proportion to the requirements currently in effect for treatment of urban runoff.

The benefits of such treatment have been realized in the form of improved ocean water quality and fewer beach closures due to health risks associated with poor water quality.

The cost to construct the connections can be prohibitive with a range of \$240,000 to \$3,500,000 for each connection, depending on the amount of the flow and site complexities. Additionally, sewer agencies report limited capacity to accept the projected future demand for treatment. Therefore, it is anticipated that future capital cost will increase due to expansion of infrastructure capacity.

Significant expenditures are required for proper maintenance and annual surcharge fees. Sewer agencies do not plan and construct these low-flow connections to the sanitary sewer system. Generally, they are planned and constructed by the cities and other agencies required to meet water quality standards. They are considered

industrial waste discharge facilities by sewer agencies and are subject to connection permit fees and annual surcharge fees. The sewer agencies have all expressed a desire to work with Los Angeles County municipalities towards the construction and implementation of new facilities that divert urban runoff to the treatment system where feasible. It is anticipated that future Low-Flow Diversion connections will be considered as regional projects and financed through multi-city agreements. Another key constraint facing municipalities in developing Low-Flow Diversion connections for dry-weather flows is the availability of sufficient capacity in both the collection and the treatment systems. Therefore, significant investment in infrastructure may be necessary to meet future capacity demands of dry-weather diversion systems.

There have been some studies conducted by the Los Angeles County Flood Control District, the Los Angeles County Sanitation Districts, and the City of Los Angeles on the use and possible future locations of Low-Flow Diversions; however, no countywide planning efforts integrating urban runoff and wastewater have been conducted within the framework of the Clean Water Act. Such planning efforts might identify opportunities for optimum integration of assets such as infrastructure, and it may be prudent for the Los Angeles County Flood Control District, with the support of the Los Angeles County Sanitation Districts and City of Los Angeles, to undertake that effort to determine the feasibility of Low-Flow Diversion facilities on a regional basis.

In 2002, in order to address concerns by various stakeholders about high levels of pollutants at Orange County beaches, the Orange County Sanitation District pursued an amendment to State law to authorize the Orange County Sanitation District to construct, operate, and maintain facilities for the diversion of urban runoff from drainage courses within its boundaries. This authority is exclusive to the Orange County Sanitation District, and it provided the Orange County Sanitation District the authority to treat urban runoff discharged by Orange County cities.

Chapter 1

Governance Structure of the Los Angeles County Sanitation Districts

Legal Authorities and Administration

The Los Angeles County Sanitation Districts (LACSD) consists of 23 sanitation districts structured under the provisions of the County Sanitation District Act, California Health and Safety Code Section 4700 et seq. Each district is a separate legal entity with the authority to own and operate sewage collection, treatment, and disposal systems, as well as refuse transfer or disposal systems. In accordance with State law, the boundaries of districts are primarily established by their tributary hydrologic drainage area rather than political boundaries.

The governing body of each district is a board of directors composed of the mayor of each city located in the district. If the district includes unincorporated areas of Los Angeles County, the Chairman of the County of Los Angeles Board of Supervisors is a member of the district's board.

Under the provisions of Section 4840 of the California Health and Safety Code, two or more districts by resolution adopted by their respective boards can enter into an agreement to employ the same engineers, surveyors, counsel, and other persons needed to carry out the various administrative functions and for the maintenance, operation, and construction of shared facilities. Beginning in the 1920s, the districts took advantage of this power and entered into such an agreement, which is now entitled the Amended Joint Administration Agreement. Each newly formed district has entered into this agreement. The Amended Joint Administration Agreement provides for a single and centralized administrative organization for dealing with various joint administrative, operation and maintenance, planning and engineering, financial management, and human resource functions. District No. 2, on behalf of all districts, is the appointed agent for providing the joint administration. All LACSD staff is employed and hired by District No. 2.

The Joint Outfall System (JOS) is the major wastewater collection, treatment, and disposal system that serves 16 of the 23 districts in the Los Angeles Basin. District No. 2 is the agent that administers the acquisition, construction, operation, and maintenance of the sites, facilities, and equipment that comprise the JOS. Costs of operating the JOS are allocated among these participating districts based on a distribution schedule that is updated annually.

Revenue and Cost Distribution

The LACSD has the authority to adopt ordinances to collect fees and charges, which provide the primary revenue sources needed to continuously construct, maintain, and operate the LACSD's sewerage systems.¹ Other funding comes from the LACSD's share of the ad valorem tax, along with various contractual and debt financing transactions. The LACSD has adopted three ordinances, which include the Connection Fee Ordinance, the Master Service Charge Ordinance, and the Wastewater Ordinance.

The LACSD Connection Fee Ordinance allows the LACSD to charge connection fees for new facilities to connect to the sewerage system and existing dischargers to increase the strength or quantity of wastewater discharged from existing connections. The revenue from the connection fee is used for expansion of the LACSD's capital facilities and to fund loans to recover the incremental capital cost of providing additional capacity in the LACSD's system. The connection fee is a one-time cost and not refundable.

The Master Service Charge Ordinance allows the LACSD to collect a service charge for various categories of residential and commercial units within the LACSD. The service charge is directly assessed on the annual property tax bill and is based on three factors: category of use, units of usage (which, together with the category of use, determines the number of sewage units), and the service charge rate per sewage unit.

Each of the various residential and commercial categories has a specific unit of usage; for example, a parcel for a single-family home, the number of students attending a university, or the square footage of office space. Based on annually assessed records, the LACSD will update the number of units of usage attributable to each parcel connected to the sewerage system in the LACSD. Sewage units take into account the average flow, chemical oxygen demand, and suspended solids per unit of usage, which reflect the burden placed on the LACSD's system by the type of residential or commercial category. For example, a parcel for a single-family residence has a sewage unit of 1 compared to 0.75 sewage units for a 1,000 square-foot office building. Both the units of usage and the sewage units for the various categories are the same for all districts in the JOS.

The total annual administrative, capital, and operational expenses for a district is the sum of various joint administration and joint outfall system costs plus the district's distinct expenses. Excluding the three districts that contract with the City of

¹ There are several districts that own and operate wastewater facilities that are not connected to the Joint Outfall System. These are located in the Santa Clarita and Antelope Valleys. Additionally, the solid waste disposal system is funded through user fees at the solid waste facilities owned or operated by the LACSD, as well as revenues obtained through sales of recyclable materials and energy recovery. Funds collected for operation of the solid waste facilities and wastewater facilities are not commingled. Because the operation and funding of the solid waste system is not pertinent to this report, no further discussion is included herein.

Los Angeles, each district's total sewage units are divided by the total sewage units of all districts to get the district's percent share of the joint administration costs. The 16 districts that are connected to the joint outfall system have a similar distribution schedule. The Master Service Charge Ordinance states that local governmental facilities are exempt from payment of a service charge to a sanitation district for wastewater discharged into the collection system. Municipalities, governmental agencies, and public schools are not required to pay connection fees or surcharges under the Wastewater Ordinance for typical wastewater discharged into the system, but they would be required to pay for industrial waste connections, such as urban runoff connection facilities, also known as Low-Flow Diversion (LFD) facilities.

Industrial users, including LFD operators, are regulated by the LACSD Wastewater Ordinance. This ordinance requires an industrial user to obtain a permit, conduct wastewater monitoring and sampling, and pay additional charges known as surcharges. The surcharge is intended to recover the LACSD's cost of providing services to an industrial user based on the actual burden, in terms of flow volume, peak flow, suspended solids, and chemical oxygen demand, that is placed on the LACSD's system. Similar to the service charge rates for residential and commercial customers, unit charge rates for flow volume, peak flow, suspended solids, and chemical oxygen demand are adopted by each individual district based upon the projected annual costs for wastewater collection, treatment, and disposal. Industrial users receive a quarterly bill in the mail for the surcharge fees. The annual flow volume, peak flow, suspended solids, and chemical oxygen demand of an industrial user determine the total annual surcharge.

The LACSD's revenue source includes a pro-rata share of the ad valorem property tax. The ad valorem property tax revenue is less than 10 percent of the annual operating costs of the LACSD. The LACSD also receives revenues from contracts, rate stabilization funds, capital improvement funds, bond proceeds, and low-interest State loans. The LACSD has express authority to sell recycled water and other by-products produced at its water reclamation plants.

Periodically, the LACSD must increase fees to be able to pay for the increased costs of maintaining and upgrading the wastewater collection, treatment and disposal systems. The LACSD has a separate entity called the LACSD Financing Authority, which is authorized to issue traditional bonds (debt financing) to pay for capital improvements. The LACSD Financing Authority carries the debt associated with those specific projects and does not need voter approval to issue bonds. The LACSD has the power to levee and collect fees for the purpose of paying any obligation to bondholders.

Section 2 (d) of Article XIII C and Section 6 (c) of Article XIII D of the California State Constitution, commonly referred to as Proposition 218, stipulates that local governments may not impose, extend, or increase any special tax unless and until that tax is submitted to the electorate and approved by a two-thirds vote. Proposition 218 also imposes requirements for mailing notice to property owners of new or increased property-related fees and a mechanism for property owners to

reject such fees via a majority protest prior to consideration of the adoption of the proposed fee at a public hearing. Fees or charges for sewer, water, and refuse collection services are subject to the mailed notice and majority protest requirements of Proposition 218, but are exempt from the requirement for a two-thirds vote of property owners for establishing or increasing fees.

Comparison with the County of Los Angeles' Proposed Clean Water, Clean Beaches Program

The governance and administrative structure proposed in the County of Los Angeles' Clean Water, Clean Beaches Program (CWCBP), a proposed parcel fee to fund water quality projects, shares a number of similarities with that of the LACSD.

In terms of governance structure, both the LACSD and the CWCBP are organized around groups of municipalities and governed by boards made up of representatives of those municipalities. For the LACSD, cities are organized into 23 individual special districts with boundaries based on hydrologic areas or watersheds. Each district's governing body is composed of the mayors of municipalities within that district and each member carries equal voting weight. For the CWCBP, municipalities are organized into nine joint powers authorities called Watershed Authority Groups (WAGs) with boundaries also based on hydrologic areas. Each WAG's governing body is composed of representatives from municipalities within the WAG. WAG governing boards also have two additional members, a public water supply agency and a State conservancy. Just like the LACSD, WAG members carry equal voting weight, except that any member whose jurisdiction comprises more than 40 percent of the total land area within the WAG has veto authority over WAG projects and programs.

In terms of administration, the individual districts in the LACSD have entered into an agreement with District No. 2 for staff to carry out all administrative and operational functions. For the CWCBP, each WAG provides its own staff support. However, unlike the LACSD projects and activities approved by individual districts, WAG projects are forwarded to an oversight committee for review. Upon the oversight committee's approval, projects and activities are forwarded to the County of Los Angeles Board of Supervisors for its consideration. If the County of Los Angeles Board of Supervisors approves the items, WAGs may pursue the projects and activities.

There is little similarity in funding sources between the LACSD and the CWCBP. Although both are subject to provisions of Proposition 218 to obtain new funding or to raise current fees, the rules to implement new stormwater fees are more stringent than those related to sewer and refuse fees. The LACSD's primary funding sources are the ad valorem property tax, connection fees, and service charges. Fee amounts vary between the individual districts. For the CWCBP, funding would come from a property-related fee with a uniform fee structure across all the WAGs.

Chapter 2

Background on the Use of Low-Flow Diversions to Treat Urban Runoff Flows in Los Angeles County

Considering the high cost to address stormwater and nonstormwater pollution, such as urban runoff, the LACFCD embarked on a regional parcel fee initiative to provide sustained funding to municipalities in Los Angeles County. However, during public hearings, significant concerns were raised by stakeholders such as public schools, businesses, some municipalities, and the general public, which prompted the County of Los Angeles Board of Supervisors to explore other means to finance stormwater pollution projects and programs.

Low-Flow Diversions

To address the permit requirements under the provisions of nonstormwater and TMDLs, the County of Los Angeles and many cities have implemented "Best Management Practices" (BMPs) to improve water quality. These BMPs consist of nonstructural implementation measures, such as ordinances or maintenance practices, as well as physical infrastructure, or "structural BMPs." One of the most effective types of structural BMPs for addressing pollution from urban runoff is LFD systems, which divert dry-weather urban runoff from MS4s to sewer systems for treatment at wastewater treatment plants.

Within Los Angeles County, the stormwater collection system (MS4) and the sanitary wastewater collection systems are operated separately. The stormwater and dry-weather urban runoff are conveyed through storm drains and channels that are owned and operated primarily by the LACFCD and other local municipalities. Domestic and industrial wastewaters are collected by the local sanitary sewer system for treatment by the LACSD, City of Los Angeles, and Las Virgenes Municipal Water District (LVMWD). As a general rule, the LACSD considers dry-weather urban runoff as wastewater that may be accepted for treatment from May 1 through September 30, provided that general requirements are satisfied. The LACSD has also allowed few-year-round discharges of dry-weather flows. Stormwater flows are not accepted by operators for treatment due to conflicts with State law, the potential to cause overflow conditions, and treatment plant capacity.

LFD connection facilities are devices placed in the storm drain systems to divert water into a sewer system for treatment. There are several types of LFD facilities with varying methods of diversion, storage, delivery, treatment, and/or reuse of flows. When implemented in ideal locations and when properly maintained, LFD facilities can be highly effective in improving receiving water quality; however, due to their complex design and maintenance-intensive nature, they tend to be more expensive to construct, operate, and maintain than other nonstructural BMPs.

Dry-weather urban runoff typically contains high concentrations of Fecal Indicator Bacteria and can contribute to exceedances of water quality standards at beach outlets and other receiving waters. Dry-weather urban runoff may originate from a variety of sources, but the most common contributors are commercial property runoff, overirrigation, broken or misaligned irrigation pipes/risers, dewatering, fire hydrant testing, car washing, and well development.

The first LFD facility of dry-weather flows into a sanitary sewer system was the Pico-Kenter LFD facility in the City of Santa Monica in 1993. In the 1980s an epidemiology study concluded that people who swim in the proximity of a stormwater discharge outlet had a higher probability to get various infections. In response, the City of Santa Monica, which depends, to a large extent, on tourism and beach goers for its economic well-being, constructed the Pico-Kenter LFD facility through coordination with the City of Los Angeles Bureau of Sanitation (LABOS) and the LACFCD. Flows from the Pico-Kenter LFD facility discharge into the Santa Monica Urban Runoff Recycling Facility, where the discharge is treated to high standards and then reused for landscape irrigation and indoor flushing.

In 2000 the City of Los Angeles partnered with the LACFCD to obtain funding under the State's Clean Beach Initiative to fund the construction of 26 LFD facilities from the City of Los Angeles' and the County of Los Angeles' storm drains into the City of Los Angeles' wastewater collection system. Due to potential conflicts with the U.S. Environmental Protection Agency's regulations that prohibit the discharge of urban runoff into the sanitary sewer system, the City of Los Angeles pursued and obtained an exemption from the regulations, provided that the proposed urban runoff discharge would not cause any overflows and were only limited to dry-weather months.

Currently, there are 41 operational LFD facilities in Los Angeles County, which work to address bacteria loadings in storm drains discharging into the bay. These diversions were permitted by the LACSD and the LABOS, with the exception of self-treatment LFD facilities such as the Hermosa Strand Infiltration Trench.

Several factors affect the suitability of selecting the location for an LFD facility, such as availability of treatment capacity, available transport capacity, and the assurance that the urban runoff pollutants will not adversely impact the treatment process. In 2003 the permittees of the 2001 Los Angeles County MS4 Permit, in cooperation with the LACSD, performed a Treatment Feasibility Study, which identified dry-weather storm drain discharges and evaluated the feasibility of their diversion to a sewer system. The study developed a priority list according to watershed with specific emphasis on impaired water bodies with historical exceedances of water quality objectives pursuant to Section 303(d) of the Clean Water Act. In 2007 the LACSD performed a Supplemental Characterization Study, which expanded upon and refined the findings of the 2003 study for areas within the LACSD's service area. These studies are discussed further in Chapter 4.

Chapter 3

Current Low-Flow Diversion Infrastructure

In order to address the presence of trash, bacteria, and other pollutants, 41 LFD facilities are operating in coastal areas of Los Angeles County. These LFD facilities fall into three different categories:

- Stand Alone LFD, where the diversion structure is not part of a larger facility; typically consists of a diversion berm inside the drain, a trash well, a pump, and a control panel.
- Pump Plant LFD, where the LFD facility serves to divert dry-weather flows entering a flood control lift station. A Pump Plant LFD facility acts as a sump pump keeping water levels low in a pump plant wet well by diverting to a local sanitary sewer.
- Self-Treatment LFD, a Stand Alone or Pump Plant LFD where dry-weather flows are treated onsite by infiltration, filtration, or disinfection rather than being sent to the sanitary sewer.

Of the 41 LFD facilities in Los Angeles County, the LACFCD owns 21 with the remainder being owned by the Cities of Long Beach, Los Angeles, Manhattan Beach, Redondo Beach, and Santa Monica. Ten LFD facilities are connected to the LACSD's treatment system, 26 are connected to the City of Los Angeles' treatment systems, and 5 divert flows to some form of self-treatment. Their flows range from 3,000 to over 750,000 gallons per day, and they divert flows from tributary areas that range from few acres to over 2,500 acres.

Cost of Construction, Operation, and Maintenance

Design and construction costs of LFD facilities in Los Angeles County have varied widely based on treatment capacity, site conditions, and sewer infrastructure availability. In addition, LFD facilities require substantial regular maintenance. Similar to initial costs, operation and maintenance expenses vary widely based on many factors, such as the type of LFD facility, treatment volume, weather conditions, watershed characteristics, sampling requirements, calibration, and equipment replacement. The tables below list the costs associated with the LACFCD's LFD facilities, which range from 60- to 800-gallon-per-minute treatment capacity. The cost information below is given to illustrate the wide variation of costs to be expected when planning an LFD facility. The connection fee is a one-time capacity buy-in fee that is based on the calculated capacity units, and it is significant for larger LFD facilities.

Approximate design, construction, and startup costs:

Item	One-Time Cost
Design, project management, environmental permitting	\$50,000 – \$500,000
Construction	\$150,000 – \$2,000,000
Sewer connection fee	\$40,000 – \$1,000,000
Range of Initial Costs per LFD	\$240,000 – \$3,500,000

Approximate operation and maintenance costs:

Item	Annual Cost
Maintenance (inspections, telemetry monitoring, logging, reporting, repairs, cleanouts, etc.)	\$35,000 – \$100,000
Equipment replacement (pumps, sensors, etc.)	\$5,000 – \$30,000
Annual industrial waste surcharge fee	\$5,000 – \$30,000
Sewer connection fee trigger (may apply when discharge exceeds permitted volume and/or rate)	\$0 – \$100,000
Range of Annual Operation and Maintenance Costs per LFD	\$45,000 – \$260,000

Table 1 lists alphabetically all the existing LFD facilities. Figure 1 shows their geographical locations and tributary areas. All of the existing LFD facilities are in coastal areas. No LFD facilities have been constructed inland.

Table 1 – Existing LFD Facilities

LOW FLOW INFORMATION				WATERSHED	OPERATION		
Low Flow Diversion Name	Lead Agency	Type	Const. Date	Area (acres)	Sewer Agency	Max Flow (gpm)	Daily Flow (gal)
1 Alamitos Bay	LBC & FCD	PP	03/01/99	269	CSD	120	89,000
2 Appian Way	LBC	PP	01/01/09	69	CSD	30	3,000
3 Arena Pump Plant	LACFCD	PP	06/13/06	81	ELS	60	86,400
4 Ashland Avenue (phase 2)*	LACFCD	SA	06/10/06	202	SM	30	36,000
5 Avenue I	LACFCD	SA	02/16/06	329	CSD	60	8,900
6 Bay Club Drive	City of LA	SA	01/24/01	n/a	CLA	n/a	n/a
7 Belmont Pump Plant	LBC	PP	01/06/10	99	CSD	60	20,000
8 Boone Olive Pump Plant	LACFCD	PP	03/23/07	70	CLA	96	138,000
9 Colorado Lagoon	LBC	SA	11/15/10	n/a	CSD	60	80,000
10 El Segundo Pump Plant	LACFCD	PP	06/13/06	242	ELS	60	86,400
11 Electric Avenue Pump Plant	LACFCD	PP	04/15/01	232	CLA	76	109,440
12 Hermosa Strand Infiltration Trench	LACFCD & HB	ST	05/01/10	78	–	250	n/a
13 Herondo Street (phase 2)*	LACFCD	SA	08/16/05	2,780	CSD	60, 120	43,200
14 Imperial Highway	City of LA	SA	04/15/06	n/a	CLA	n/a	n/a
15 Manhattan Beach Pier	Man. Beach	SA	06/15/06	n/a	CSD	50	30,000
16 Manhattan Beach Pump Plant	LACFCD	PP	09/07/04	296	CSD	50	30,000
17 Manhattan, 28th & The Strand	LACFCD	SA	03/26/07	1,189	CSD	130	80,000
18 Marie Canyon	LACFCD	ST	11/18/09	525	–	100	144,000
19 Marina Del Rey (Oxford Basin)	LACFCD	SA	03/17/10	194	CLA	200	288,000
20 Marquez Avenue	City of LA	SA	07/15/06	n/a	CLA	n/a	n/a
21 Montana Avenue	Santa Monica	SA	06/30/07	n/a	SM	n/a	n/a
22 Palisades Park	City of LA	SA	11/28/00	n/a	CLA	n/a	n/a
23 Parker Mesa/Castlerock	LACFCD	SA	04/10/07	374	CLA	75*	108,000
24 Penmar Water Treatment	City of LA	ST	04/01/13	n/a	–	n/a	n/a
25 Pershing Drive, Line C	LACFCD	SA	04/17/06	2,000	CLA	240	345,600
26 Pico-Kenter (SMURRF)	Santa Monica	ST	01/01/93	n/a	–	n/a	n/a
27 Playa del Rey	LACFCD	SA	04/15/01	207	CLA	180	259,200
28 Pulga Canyon	LACFCD	SA	06/22/04	999	CLA	260*	188,000
29 Redondo Beach Pier	Red. Beach	SA	06/15/06	n/a	CLA	n/a	n/a
30 Rose Avenue (phase 2)*	LACFCD	SA	06/14/05	1,915	SM	100	61,000
31 Santa Monica Canyon	City of LA	SA	06/10/03	n/a	CLA	n/a	n/a
32 Santa Monica Pier	Santa Monica	SA	10/01/97	n/a	SM	n/a	n/a
33 Santa Ynez	LACFCD	SA	06/22/06	4,487	CLA	826*	1,189,440
34 Sapphire LFD	Red. Beach	ST	12/31/09	144	–	n/a	n/a
35 Temescal	City of LA	SA	06/23/03	n/a	CLA	n/a	n/a
36 Termino Avenue Drain	LBC	SA	10/12/11	n/a	CSD	n/a	n/a
37 Thorton Avenue	City of LA	SA	11/28/00	n/a	CLA	n/a	n/a
38 Venice Pavilion/Windward Avenue	City of LA	SA	06/10/03	n/a	CLA	n/a	n/a
39 Washington Blvd	LACFCD	SA	03/12/07	477	CLA	63.9	92,000
40 Westchester	LACFCD	SA	07/29/04	2,402	CLA	125	180,000
41 Wilshire Boulevard	Santa Monica	SA	08/31/07	n/a	SM	n/a	n/a

Types of LFD: SA: "Stand Alone"

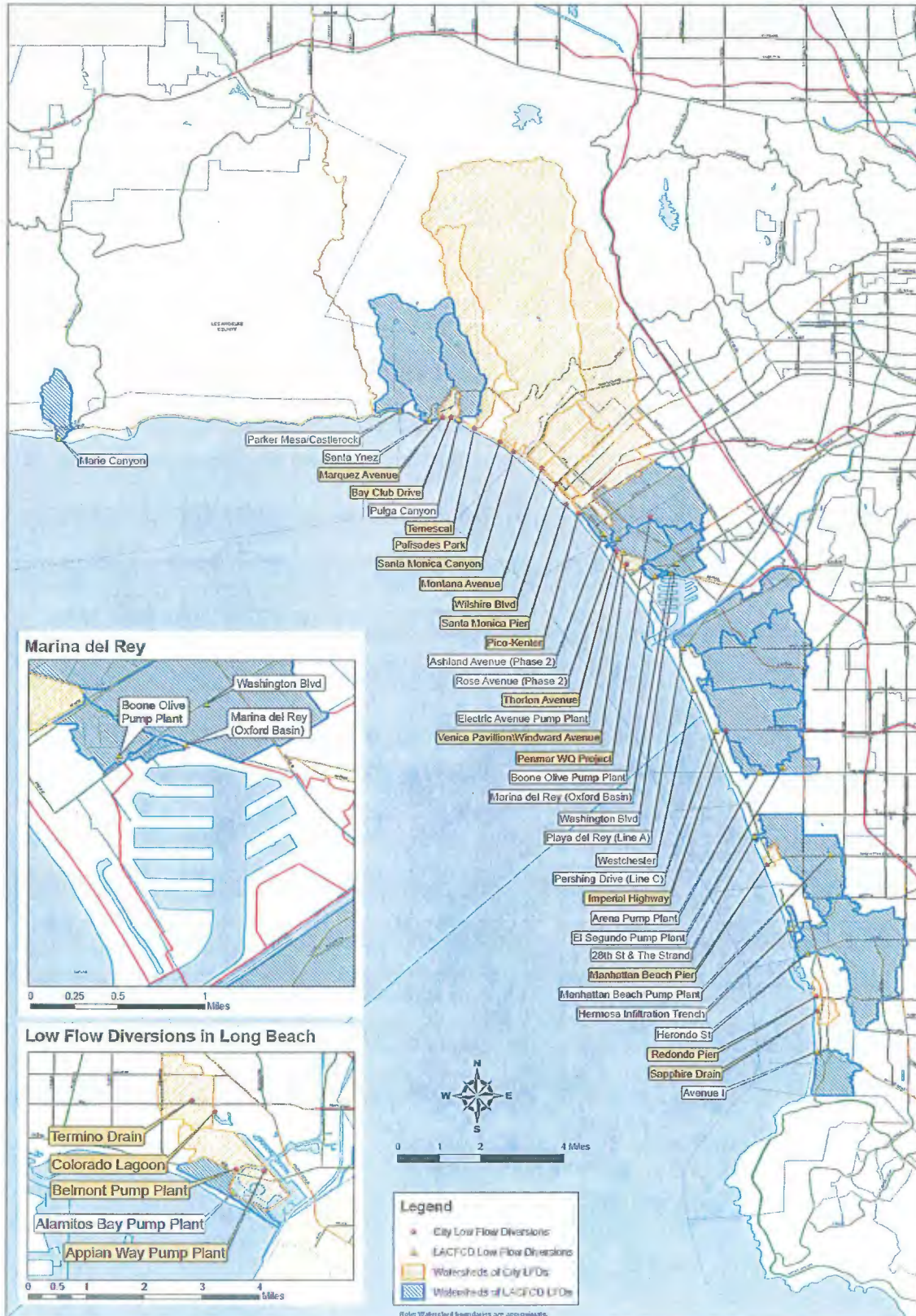
PP: LFD integrated into Pump Plant

ST: LFD with self-reliant treatment

n/a = data not available

Figure 1 – MAP OF FACILITIES

Santa Monica Bay Low Flow Diversions and their Watersheds



Chapter 4

Assessment of Future Needs

The anticipated future need for additional LFDs is based on the following three considerations:

1. The 2012 MS4 Permit incorporated a total of 33 TMDLs throughout Los Angeles County, compared to only two TMDLs in the previous MS4 Permit. In light of their success in meeting dry-weather TMDLs in the past and their acceptance as a proven technology by the Regional Board, LFD facilities are expected to remain a key part of a comprehensive water quality improvement strategy.
2. In addition to TMDLs, the 2012 MS4 Permit further restricts regulations on illicit dry-weather urban runoff by requiring permittees to systematically screen storm drain outfalls for dry-weather flows. Where significant illicit dry-weather urban runoff is identified, permittees must take steps to eliminate the sources of the flows or otherwise prevent the flows from entering the receiving waters, such as by diverting the flows for treatment via an LFD facility.

A Los Angeles Countywide Dry-Weather Discharge Feasibility Study was conducted by the County of Los Angeles Department of Public Works in 2003. In 2007 the LACSD conducted a Supplemental Characterization of the Los Angeles County Storm Drains Study on storm drains within the LACSD service area. Both of these studies included assessments of future needs based on specific selection criteria. The criteria included impaired water bodies, amount of dry-weather flows, proximity to a sanitary sewer system and available sewer capacity, concentration of pollutants, impacts to water quality, and other factors. Under these studies, several hundred storm drains were surveyed and prioritized in the watersheds listed below:

- Malibu Creek Watershed
- Ballona Creek
- Santa Monica Canyon Channel
- Santa Monica Bay Shoreline
- Dominguez Watershed²
- San Gabriel River Watershed²
- Los Angeles River Watershed²
- Santa Clara River Watershed²

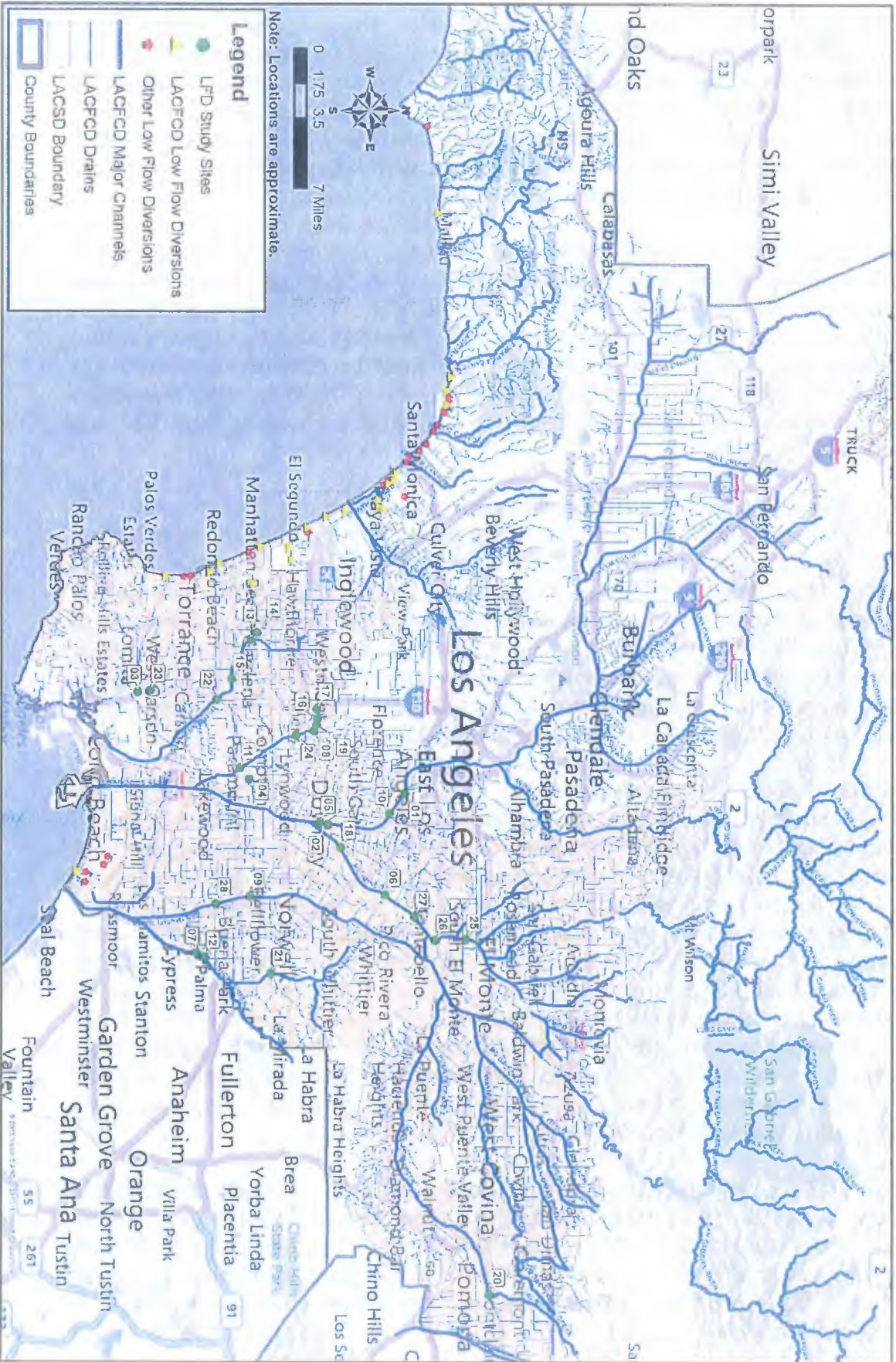
As part of the 2007 LACSD study, a prioritized list was developed and is included below as Table 2 and shown in Figure 2.

² Watersheds all or partially within the LACSD service area

Table 2 – LFD Facilities Identified in LACSD's Supplemental Characterization of Los Angeles County Storm Drains (LACSD Service Area Only)

	Public Works Drain Designation	City Proximity	Watershed area (acres)	Anticipated Ave. Flow (cfs)	River
1	DDI 26	East Los Angeles	6544	1.87	Los Angeles River
2	Project 7850	South Gate	5877	1.68	Los Angeles River
3	Lomita Blvd Drain	Lomita	5674	1.62	Wilmington Drain
4	Project 6	Compton	5534	1.58	Compton Creek
5	DDI 23	South Gate	5304	1.52	Los Angeles River
6	DDI 23/1109	Pico Rivera	4150	1.19	Rio Hondo
7	Project 21 Line A	Artesia	3869	1.11	Coyote Creek
8	Project 73 - Unit 2	Lynwood	3731	1.07	Compton Creek
9	Hooper Ave. Drain System	Bellflower	3465	0.99	Compton Creek
10	Project 16	Huntington Park	3124	0.89	San Gabriel River
11	DDI 22	Compton	2983	0.85	Los Angeles River
12	Glen Ave. Drainage System	Compton	2920	0.84	Compton Creek
13	Project 3001 Line B	Gardena	2237	0.64	Coyote Creek
14	Project 12	El Camino Village	2195	0.63	Dominguez Channel
15	Project 4350 / Nogales Channel	Gardena	1871	0.53	San Jose Creek
16	Project 10	Westmont	1867	0.53	Dominguez Channel
17	Project 635	Westmont	1609	0.46	Compton Creek
18	Project 539A	Cudahy	1501	0.43	Rio Hondo
19	Project 489	Florence	1455	0.42	Compton Creek
20	Project 266	Pomona	1207	0.35	San Jose Creek
21	Project 1111	La Mirada	1140	0.33	Coyote Creek
22	Project 1206	Carson	1118	0.32	Dominguez Channel
23	Project 1201	West Carson	1112	0.32	Wilson Drain
24	Project 73 – Unit 1	Willow Brook	1025	0.29	Compton Creek
25	Project 1115	South El Monte	985	0.28	Rio Hondo
26	Project 1225	Montebello	952	0.27	Rio Hondo
27	Project 9901	Montebello	834	0.24	Rio Hondo
28	Project 1113	Artesia	653	0.19	San Gabriel River

Figure 2 – LFDs Identified in LACSD's Supplemental Characterization of Los Angeles County Storm Drains



Although the methodology developed for these studies successfully identified storm drains as possible diversion candidates, the scope of the studies did not include the long-term investigations and analyses that will be necessary before the feasibility of the dry-weather diversions can be fully assessed. Moreover, dry-weather urban runoff characteristics are inherently variable, and preliminary data must be verified. Further evaluation to refine flow estimates, flow sources, drain alignment, and water quality data will be necessary for each proposed drain diversion.

Due to the high cost of construction and ongoing maintenance, conducting a cost-benefit analysis is the next necessary step. For example, many diversion candidates in the San Gabriel River Watershed are at a substantial distance (up to 11,000 feet) from the nearest sewer capable of accepting the dry-weather urban runoff. In these cases, constructing a discharge line from the storm drain outlet to the sewer line could easily exceed the cost of a diversion, making other mitigation measures potentially less expensive; however, their effectiveness may be less certain than an LFD facility.

The LACSD operates seven treatment and water reclamation plants in the JOS. To date, the policy of the LACSD has been for urban flows to be discharged into collection systems that are connected only to the Joint Water Pollution Control Plant (JWPCP) in Carson and are not tributary to water reclamation plants. The LACSD operates a significant wastewater collection system that connects to the JWPCP, but portions of the Cities of Arcadia, Artesia, Azusa, Cerritos, Claremont, Duarte, El Monte, Glendora, Irwindale, La Habra Heights, La Mirada, La Verne, Monrovia, Norwalk, Temple City, and Whittier are not in close proximity to sewers that bypass water reclamation plants and are tributary only to the JWPCP (See Appendix B).

To date, LFD facilities in the coastal areas have been found to be feasible and beneficial to improving water quality at recreational beaches. In order to respond to the potential need for additional LFD facilities in inland areas of the Los Angeles and San Gabriel Rivers Watersheds, the LACSD is willing to investigate the feasibility of accepting LFD facilities in areas of the JOS that are tributary to water reclamation plants. As part of any investigation of a proposed LFD facility, which would be on a case-by-case basis, the LACSD would need to ensure that (1) there would be no regulatory compliance impacts related to treatment plant discharges, (2) there would be no negative impacts to existing or planned recycled water projects, and (3) there is sufficient conveyance and treatment capacity downstream. It should be noted that, in some cases, it may not be feasible to implement LFD facilities in parts of these watersheds, including areas where sewer lines are not in immediate proximity or do not have enough capacity to handle the anticipated flows.

In 2004 the LABOS prepared an integrated resources plan, in which dry-weather runoff options were thoroughly examined for the Ballona Creek, Dominguez Channel, Los Angeles River, and Santa Monica Bay Watersheds. The study analyzed both source control measures and methods that address runoff that has entered the storm drain system. For runoff that already entered the storm drain, diversion to a wastewater treatment system was analyzed as an option. The study also analyzed

bacteria, trash, pesticides, nutrients, selenium, and other key toxics as the main constituents of concern and potentially likely requirements for meeting the TMDLs for dry weather. Of these, bacteria was determined to be the primary constituent of concern for dry-weather urban runoff treatment.

The study estimated future dry-weather treatment and discharge needs to address the Bacteria TMDL throughout the City of Los Angeles' watersheds to be about 87 million gallons per day. Although the LABOS' system has capacity for the existing and a few additional LFD facilities, the City of Los Angeles could not manage the entire flow if it was diverted to the wastewater treatment plants.

In 2002, in order to address concerns by various stakeholders about high pollutant concentrations at Orange County beaches, the Orange County Sanitation District (OCSD) pursued an amendment to State law to authorize the OCSD to construct, operate, and maintain facilities for the diversion of urban runoff from drainage courses within its boundaries. This authorization in State law was exclusive to the OCSD and allowed the OCSD the authority to treat urban runoff. Subsequently, the OCSD authorized up to 4 million gallons per day of urban runoff to be discharged into its treatment system at no charge to discharging cities.

In anticipation of future needs to expand treatment of urban runoff, in June 2013 the Board of Directors of the OCSD expanded the allowed discharge of dry-weather urban runoff to 10 million gallons per day and waived the related fees for discharging municipalities (Appendix C). The value of 10 million gallons per day in a one-time capital improvement cost and treatment cost over a 20-year period is estimated at \$90 million. As a point of reference, the cumulative discharge of all of the LFD facilities connected to OCSD's treatment system as of 2013 was less than 4 million gallons per day.

The LFD program of the OCSD provides the Orange County municipalities a major opportunity to implement LFD facilities at reduced cost to address various pollutants in their water bodies. Currently, the Orange County Department of Public Works assists the OCSD by providing prioritization on a regional basis of new LFD facility based on TMDL and impairment of water bodies.

According to the LACSD, in comparison, even though the Los Angeles County Sanitation Districts does not have a limit on the amount of dry weather flow that can be discharged to its collection system, there is currently only 0.4 million gallons per day received from the ten permitted LFD facilities. As described in Chapters 2 and 3 above, any proposed LFD in the Los Angeles County Sanitation Districts' service area would be considered on a case-by-case basis and accepted if there were adequate conveyance and treatment capacity, and the discharge would not negatively affect treatment plant performance or the ability to beneficially use recycled water. However, the Los Angeles County Sanitation Districts' financial structure (as described in Chapter 1) does not allow for the acceptance of dry weather discharges, or any other new discharges, without the associated connection fees and annual user charges.

A key component in determining feasibility to expand the use of LFD to address urban runoff pollution is by examining the existing capacity of the treatment and collection systems (both local and trunk sewer systems) and correlating those to watershed areas where significant pollutants are present. Preparation work has already been started by the County of Los Angeles Department of Public Works as a first step to develop a Geographic Information System database of storm drain and trunk sewer locations, which would aid in future analysis. Such analysis would provide prioritization for future opportunities for new LFD facilities to intercept urban runoff.

Chapter 5

Permit Requirements for Dry-Weather Diversion

As previously mentioned, the sewer agencies do not plan and implement LFD facilities. Rather, it is municipalities, which own and/or operate the MS4 system and need to address downstream pollution or address a regulatory requirement, that are the lead agencies. The collection system operators require a permit for the connection, discharge, and treatment. In 2009 the LACSD developed written guidelines to assist municipalities and agencies in obtaining an industrial waste discharge permit to discharge dry-weather flows into the treatment system (Appendix A). The key requirement is that capacity must be available to accept the new flows. Available hydraulic capacity should be demonstrated for the local collection system, the trunk line collection system, and the treatment system prior to connection. In addition, sewer connection permits typically contain key provisions such as removing gross solids and debris larger than 3/8 inch and provide means for measuring flows. These provisions are consistent with other industrial waste discharge permits. In addition, the LACSD requires that the discharge not cause any downstream sewer flows deeper than three-fourths of the pipe diameter and incorporate various technical apparatus to provide for safety and automatic shutdown in case of precipitation exceeding 0.1 inch. Telemetry is also required in case a spill occurs into the storm drain or to remotely shut down the LFD facility in case of an overflow.

The LACSD requires that the discharging agency obtain and pay a one-time connection fee at a cost that correlates to the amount of flow and strength of wastewater being discharged. Connection fees are based on the equivalent capacity units proposed to be discharged and can range from \$40,000 to \$1,000,000 for a typical LFD facility based on the 2011-12 capacity unit rates. In addition, the discharging agency is required to provide the LACSD with a quarterly report on the amount of flow discharged and its strength. The quarterly surcharge fees due to the LACSD are based on these flows. In addition to a permit from the LACSD, a permit from the local sewerage agency is usually required.

Diversions into the LACSD treatment system are not allowed where incompatible pollutants have been detected in quantities that may interfere with the treatment plant's ability to comply with Regional Board's waste discharge requirements. To date, only diversions to sewers tributary to the JWPCP in Carson have been considered, and compliance with the corresponding NPDES Permit and Ocean Plan criteria are evaluated as part of the analyses. As previously mentioned, in the past, LFD facilities tributary to LACSD water reclamation plants were not accepted, but the LACSD is willing to investigate the feasibility of accepting LFD facilities in other parts of the JOS on a case-by-case basis.

In order to maintain optimum efficiency in operation and to avoid potential for sewage overflows, the LACSD adopted additional provisions such as the use of telemetry for remote shutoff, periodic sampling of flows, periodic inspections, and diversion of stormwater flows.

Key concerns with dry-weather diversion into the sanitary sewer system are the risk for sewage spills and illicit discharges to storm drains that could cause an overflow or upset the treatment process at the downstream plants. In addition, there has been an instance where the Regional Board permitted discharge of water from a construction site to a storm drain not knowing that there is an LFD facility downstream owned by the LACFCD. This resulted in increased billing for the LACFCD and added to the risk of a potential sewer overflow. The Regional Board was subsequently informed of all the geographic areas that drain into LFD facility to avoid issuing such permits. The Regional Board will need to be updated as additional LFD facilities are implemented.

The process for a connection permit from the LABOS is consistent with the above; however, because the LABOS owns the local trunk line sewers and the treatment facilities, only one permit would be required.

The LVMWD has unique challenges within its service area that pose difficulties to runoff interception and treatment using its wastewater collection system. For example, the NPDES requirements for the Tapia plant include a seven-month prohibition on any treated wastewater discharges with very limited exceptions for plant upset, unseasonal rain events, and flows necessary to sustain habitat for "steelhead" trout in Malibu Creek. Imbedded in this prohibition are two issues related to treatment of dry-weather runoff.

The first issue is that interception of urban runoff before it enters Malibu Creek or its tributaries would reduce the volume of water in Malibu Creek below Rindge Dam (currently the upstream limit of steelhead trout in Malibu Creek) during the dry season, when these flows are necessary in order to maintain trout habitat. The second issue is discharge quality. The LVMWD's system currently must comply with water quality requirements that are among the most stringent in the State – requirements that, looking to the immediate future, may become even more stringent.

In addition, the Tapia plant has already experienced a significant loss in operational capacity in order to meet current regulatory limits. Additional treatment capacity at Tapia may be lost depending on how the State implements the TMDL for benthic macroinvertebrates/sediments in Malibu Creek.

While current regulatory constraints severely limit the opportunity to treat dry-weather runoff at LVMWD facilities in the near-term, some opportunities are worth noting. The need to maintain minimum stream flows in Lower Malibu Creek for steelhead trout, currently a constraint on runoff treatment, might actually be better accomplished by the interception of runoff in the upper watershed, treatment at Tapia plant, and discharge to the lower creek. The reason is that, under current conditions, most of the dry-weather runoff into the upper creek never makes it to the lower watershed due to in-stream losses.

In summary, the treatment of urban runoff is severely constrained at LVMWD facilities due to regulatory and environmental challenges unique to its service area. However, if it was sufficiently important to treat dry-weather runoff currently reaching Malibu Creek and if funding was made available through district customers to underwrite the capital and operational costs, then it could be accomplished in a manner that would actually increase habitat for endangered steelhead trout and other flow-dependent aquatic life in Malibu Creek and other receiving waters in the area.

Other sewer system operators within Los Angeles County include the City of Burbank and the Consolidated Sewer Maintenance District of Los Angeles County (CSMD). The City of Burbank provides tertiary treatment to wastewater before discharging into the Burbank Western Channel, a tributary of the Los Angeles River. However, the City of Burbank discharges solids removed during treatment to the LABOS' wastewater collection system for further treatment at the Hyperion Wastewater Treatment Plant. The CSMD is the primary agency that operates and maintains local sewer systems for many Los Angeles County municipalities. The CSMD also operates small "package" wastewater treatment plants in Malibu and Lake Elizabeth. Neither the City of Burbank nor the CSMD systems have capacity to accept and treat urban runoff.

Appendix A – LACSD Guidelines for Accepting Dry-Weather Flows

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY (DISTRICTS)

Industrial Waste Section
P.O. Box 4998
Whittier, CA 90607-4998

Dry Weather Urban Runoff Diversions (7/2/09)

In the interest of promoting better health and safety protection for those who engage in water contact activities in coastal areas bordered by the Districts service area, the Districts have consented, where justified, to accept the diversion of dry weather urban runoff into the sewer system. Historically, these diversions have been permitted to be active from May 1 through September 30, the traditional water contact period.

The agencies responsible for the storm water collection system are required to obtain permits from the Districts, install equipment to remove gross solids, provide the means for measuring flow, and pay appropriate fees. The permits also recognize that the permittees are responsible for complying with the Districts' *Wastewater Ordinance* including local effluent limitations. In some cases the permits limit the daily discharge period where capacity issues are a concern.

As the Los Angeles Regional Water Quality Control Board has adopted more stringent policies concerning the levels of bacteria in coastal waters and is considering additional requirements for inland water bodies, there continue to be inquiries into the ability of the Districts to accept dry weather diversions. In an effort to aid the inquiring agencies in selecting priorities, the following guidance is provided.

Dry Weather Urban Runoff Diversion Guidance

The following general requirements will apply to all dry weather urban runoff diversions within the Districts' service area. Details may be obtained by contacting the Districts' Industrial Waste Section at extension 2900 or accessing the Districts' website at www.lacsd.org.

- All projects for dry weather diversion to the sewer system must obtain an Industrial Wastewater Discharge Permit prior to activation of facilities. The permit application and instructions may be obtained from the Districts' web site www.lacsd.org under the Industrial Waste section.
- Diversions should consolidate multiple smaller storm drains where feasible. Drains identified by multiple agency workgroups should be given priority for diversions.
- To the extent feasible, non-contaminated dry weather flows should be segregated from diverted flows. Tributary flows from industrial facilities being discharged under NPDES

permits are considered non-contaminated dry weather flows. All NPDES permitted flows tributary to the diversion point must be identified to the Districts.

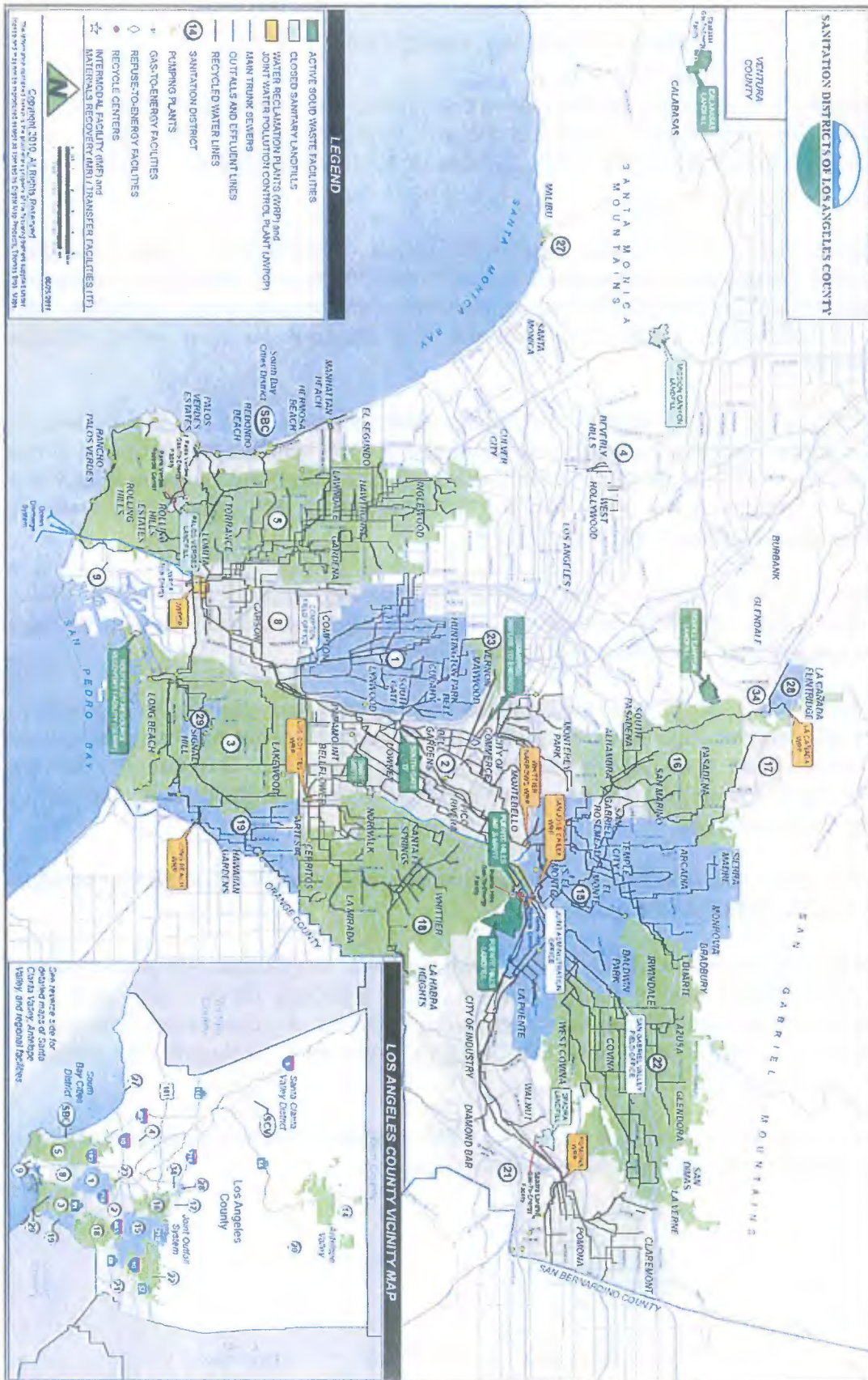
- Dry weather runoff discharge permits generally limit diversions to May 1 - September 30. However, the discharge periods for some diversion projects may be increased to April 1 through October 31 to coincide with requirements imposed on the permittees by the Regional Board. The Districts may allow for year round discharge provided the sewerage system is not adversely impacted and there is an identified environmental benefit.
- The permit will have a duration not to exceed 5 years. Prior to expiration of the permit, the permittee will need to apply for a permit renewal.
- Off peak discharge will generally be required for all dry weather urban runoff diversion projects regardless of immediate downstream sewer conditions. The Districts may allow 24 hour per day discharge provided the sewerage system is not adversely impacted and there is an identified environmental benefit.
- The discharge rate will generally be limited to ensure that the downstream sewer will not flow more than 3/4 depth. If the dry weather runoff discharge will cause the sewer to flow at greater than 3/4 depth, or if the Districts have concerns for other operational difficulties, the allowable flow rate may be decreased.
- The discharge must be pumped. The force main should have a check valve between the pump and the connection to the sewer. It should be installed so as to minimize the possibility of wastewater backing into the storm drain.
- Facilities providing for the removal of trash and sediment must be provided. Debris larger than 3/8-inch must not be discharged.
- An effluent flow meter must be installed. The flow meter should have a non-resettable totalizer and an instantaneous recorder to assist in the peak flow compliance determination.
- The acreage of the area tributary to the diversion point must be provided to the Districts. The applicant must perform an illicit discharger investigation to determine if any significant inappropriate wastestreams are tributary to the diversion. A report of the investigation must be submitted with the permit application. The permittee should exercise procedures to minimize the generation of unnecessary dry weather flows. Dry weather diversions greater than 185 gpd/acre are considered excessive.
- The Districts may require the permittee to implement Best Management Practices (BMPs) and pollution prevention strategies to minimize or eliminate nuisance flow, from the area or site served by the proposed diversion project.
- A gas detector to shut down the operation upon reaching a 20% LEL must be provided for any diversion structure serving a drainage area of more than 300 acres.
- A rain collector capable of measuring 0.1" of rainwater must be installed. Upon sensing

0.1" of rainwater, the system must automatically shut off power to the pump with the newly accumulated flow discharging to the storm drain. Power to the pump should not be turned back on for at least 24 hours after cessation of the rain event. Diversion levels lower than 0.1" may be proposed by the applicant or required by the Districts depending on downstream sewerage conditions.

- The permittee will be required to provide the Districts unencumbered access to either the source of power or the controls to the discharge pump so that diversion may be interrupted should a spill occur upstream or should any other event occur that may adversely impact the Districts' sewerage system.
- Should the diversion be of sufficient size to have the possibility of significantly impacting the Districts' sewerage system, the permittee may be required to install and maintain a communications system such that the discharge can be continually monitored and regulated by the Districts from a remote location.
- Periodic sampling of the dry weather flows and submission of self-monitoring reports will be required.
- The permittee will be required to pay connection fees, annual surcharges, and any required permit processing fees.
- The permittee will be responsible for the quality of the wastewater discharged to the sewer system, and must meet Districts' wastewater discharge standards.
- Wastewater diversions will not be allowed where incompatible pollutants have been detected in quantities that may interfere with the downstream treatment plant's ability to achieve waste discharge requirements. For the foreseeable future, diversions will only be allowed to the Districts' Joint Water Pollution Control Plant in Carson.
- The permittee should provide the Districts a map of the storm drain system tributary to the diversion point in a GIS layer consistent with Districts' standards.
- The local permitting agency may have additional requirements, especially if the discharge is to a local sewer.
- The permittee will be required to indemnify and hold the Districts harmless from liability associated with the dry weather urban runoff, including but not limited to failure of the check valve/pump system to prevent sewage from backing into the storm drain.

Appendix B – Map of the Los Angeles County Sanitation Districts

Map of Los Angeles County Sanitation District



Appendix C – Resolution No. OCSD 13-09, Orange County Sanitation District, June 29, 2013.

RESOLUTION NO. OCSD 13-09

**A RESOLUTION OF THE BOARD OF DIRECTORS OF ORANGE COUNTY
SANITATION DISTRICT ESTABLISHING THE POLICY FOR DRY
WEATHER URBAN RUNOFF AND REPEALING RESOLUTION NO. OCSD
01-07**

WHEREAS, the Orange County Sanitation District ("District") is a duly organized County Sanitation District existing pursuant to the County Sanitation District Act, California Health and Safety Code section 4700, et seq., providing for the ownership, operation, and maintenance of wastewater collection, treatment, and disposal facilities within Orange County, California; and

WHEREAS, pursuant to Health and Safety Code section 4730.66, the District is authorized to acquire, construct, operate, maintain, and furnish facilities for all or any of the following purposes: "(1) The diversion of urban runoff from drainage courses within the district. (2) The treatment of the urban runoff. (3) The return of the water to the drainage courses. (4) The beneficial use of the water."; and

WHEREAS, certain types of dry weather urban runoff create public health and/or environmental problems which are infeasible to economically or practically control through traditional stormwater best management practices; and

WHEREAS, the District has available limited system capacity in its collection, treatment and disposal facilities which may allow the District to accept discharge of certain dry weather urban runoff flows not to exceed 10 million gallons per day ("mgd") without adversely affecting the District's primary function of collection, treatment and disposal of sanitary sewer discharges; and

WHEREAS, the District does not have system capacity available to allow wet weather discharges to the District's facilities; and

WHEREAS, for purposes of this policy, "wet weather" shall mean any period during which measurable rainfall occurs in any portion of the District's service area and shall include the period following the cessation of rainfall until the District determines that the wet weather event is no longer impacting the District's collection, treatment and disposal facilities; and

WHEREAS, for the purposes of this policy, "dry weather" shall mean any period which does not fall within the definitions of "wet weather"; and

WHEREAS, the District developed a Dry Weather Urban Runoff Policy pursuant to Resolution No. OCSD 01-07 to address certain environmental concerns associated with dry weather urban runoff; and

WHEREAS, the District has successfully treated 7 billion gallons of urban runoff since the year 1999 with daily flows ranging from 0.5 to 3.5 mgd; and

WHEREAS, the District has evaluated: (1) sources of dry weather urban runoff; (2) the quality and quantity of dry weather urban runoff discharges to the sewerage system; and (3) the District's costs associated with such discharges; and

WHEREAS, the presence of toxic amounts of selenium in the Upper Newport Bay Watershed has resulted in regulatory requirements to remove selenium loadings from upstream creeks and channels to protect downstream aquatic life; and

WHEREAS, attempts by the County of Orange and local cities to remove the selenium via stormwater best management practices and other available treatment technologies have been unsuccessful; and

WHEREAS, as a result of the regulatory requirements to remove selenium loadings, the District received requests to accept up to 4 mgd of new urban runoff flows, for an estimated total daily average flow in excess of 6 mgd; and

WHEREAS, the District is authorized to accept the dry weather urban runoff, provided that the discharge occurs in full and complete compliance with the terms of this Dry Weather Urban Runoff Policy and relevant Ordinances and/or Resolutions, including any subsequent amendments thereto; and

WHEREAS, the District intends to only issue *Dry Weather Urban Runoff Discharge Permits* to public agencies that have jurisdiction and authority over surface water runoff and wastewater; and

WHEREAS, the District intends to waive fees and charges associated with authorized discharges of dry weather urban runoff to the sewerage system, where such runoff originates within the District's service area, until such time as (1) the District modifies its dry weather urban runoff policy to levy a charge for use on urban runoff discharges into its sewerage system, or (2) requires dischargers to pay any applicable fees established through incorporation in the District's current Fee Ordinance and/or subsequent amendments thereof. These fees, if levied in the future, may include permit fees, capital facilities charges, operations and maintenance costs, and/or any other fees or charges which the District determines to impose on such discharges; and

WHEREAS, at such time that District staff anticipates discharges of dry weather urban runoff will reach 9 mgd, the District staff will revisit this Policy with the Board of Directors to determine if further amendment to the Policy is necessary.

NOW, THEREFORE, the Board of Directors of the Orange County Sanitation District,

DOES HEREBY RESOLVE, DETERMINE AND ORDER:

Section 1: That the following Dry Weather Urban Runoff Policy is established as District Policy:

"POLICY FOR ACCEPTANCE OF DRY WEATHER URBAN RUNOFF INTO THE ORANGE COUNTY SANITATION DISTRICT SEWERAGE SYSTEM

No person or entity shall discharge urban runoff, directly or indirectly, to the District's sewerage system during wet weather. The District may accept urban runoff into the sewerage system during dry weather conditions ("dry weather urban runoff") provided that the discharger meets the following requirements:

A. Requirements for Obtaining Permission to Discharge

1. The dry weather urban runoff diversion to the sewerage system shall address a public health or environmental problem associated with the runoff discharge that cannot be otherwise economically or practically controlled.
2. A dry weather urban runoff diversion structure shall be designed and installed and other necessary provisions shall be implemented to exclude storm and other runoff from entry into District's sewerage system during wet weather. The diversion structure shall be equipped with a lockable shut-off device, satisfactory to the District, and to which the District shall be provided access at all times.
3. Prior to commencement of discharge of the dry weather urban runoff to the District's sewerage system, in accordance with the policies and procedures set by the District, the applicant shall apply for and obtain a Wastewater Discharge Permit ("permit") from the District in accordance with the most current District Ordinance governing Wastewater Discharge Regulations. The District may require that the permit applicant enter into an agreement setting forth the terms under which the dry weather urban runoff discharge is authorized in addition to or in lieu of issuance of the permit. Only public agencies that have jurisdiction and authority over surface water runoff and wastewater are eligible for Dry Weather Urban Runoff Discharge Permits.
4. The permit applicant shall consider and evaluate the feasibility of other disposal alternatives (i.e., discharge into storm drains, reuse and reclamation of the runoff, etc.) for the discharge of the dry weather urban runoff. The permit applicant shall submit to the District a report, satisfactory to the District, evaluating each disposal alternative, and demonstrating why each alternative is not economically or practically feasible to dispose of the proposed dry weather urban runoff in lieu of sewer discharge.

5. The permit applicant's proposed diversion system shall prevent debris and any other pollutants of concern from entering the District's sewerage system. The permit applicant shall submit design drawings and an operations and maintenance plan for the proposed dry weather diversion structure which shall be sufficient to establish that all District requirements will be met to prevent pass through of and/or interference with the District's sewerage facilities. The diversion system shall be capable of measuring and recording on a daily basis the flow discharged to the District's sewerage system.
6. The permit applicant shall submit best management practices and pollution prevention strategies designed to minimize or eliminate dry weather urban runoff. More stringent practices and strategies may be required depending on the nature of the anticipated discharge.
7. The General Manager, or his or her designee, may impose additional requirements as may be appropriate to reduce the burden on the District's collection, treatment and disposal facilities.
8. Collection, treatment and disposal of sanitary sewer discharges remain the District's primary functions. No additional dry weather urban runoff permits shall be issued if the General Manager, or his or her designee, determines that such issuance may, alone or in conjunction with other permits, adversely affect the District's primary functions. Each request to discharge is reviewed to determine if there is available local and regional collection and pumping capacity.
9. As a condition of the permit and/or agreement, the permit applicant shall indemnify, defend and hold the District harmless from any and all liability associated with the dry weather urban runoff to which the permit and/or agreement apply, including, but not limited to, any and all negligence which is alleged to have occurred with respect to any District action to render emergency assistance at the diversion system facilities in the event of an operational malfunction or other problem at such facilities. The permit applicant's obligation to indemnify and defend the District shall not include claims or liability arising from the District's active negligence or intentional wrongful acts or omissions. The terms of the indemnity and duty to defend shall be in a form satisfactory to District's General Counsel.

B. Requirements After Granting Permission to Discharge

1. The quality and quantity of the discharge shall meet the conditions, provisions or limitations contained in the most current District Ordinance governing *Wastewater Discharge Regulations**, including any subsequent amendments.

* Any reference in this policy to any District Ordinance, policy or permit shall include any subsequent amendments, modifications, revisions or successors to such ordinance, policy or permit.

2. The permittee shall conduct self-monitoring for the pollutants of concern as directed by the District to ensure compliance with the terms, conditions and limits set forth in the permit/agreement and the District's Ordinances. Unless otherwise directed, the permittee shall conduct and submit self-monitoring of the discharge on a quarterly basis or as directed by the District. The permittee shall monitor the flow and submit reports documenting the quality and quantity of the flow discharged as directed by the District.
3. In the event that the quality or quantity of the dry weather urban runoff discharge to the sewerage system does not meet the conditions, provisions, or limitations set forth in the discharge permit/agreement or the District Ordinance governing Wastewater Discharge Regulations, the permittee shall take immediate action to correct the problem(s) to ensure that full compliance is met. The District may take enforcement action for any violation of the terms of the permit/agreement and/or the District's Ordinances, including termination of the discharge, in accordance with the provisions of the District Ordinance governing Wastewater Discharge Regulations, including any subsequent amendments.
4. The District reserves the right to impose other fees and charges on all urban runoff dischargers, including but not limited to permit fees, capital facilities charges, and operations and maintenance charges in accordance with any future amendment of this policy, and pursuant to any other current or future District Ordinances or policies. Failure to pay fees in a timely manner shall be cause for termination of the permit/agreement and the discharge. All dischargers shall be subject to noncompliance sampling fees set forth in the current District Ordinance governing Wastewater Discharge Regulations, including any subsequent amendments.
5. The permittee shall provide the District's employees and representatives with access to the diversion location and all areas from which and through which runoff originates and/or flows, during all reasonable hours, which shall include any time when a discharge to the sewerage system may be occurring, for purposes of inspection, monitoring, and verifying compliance with the permit/agreement and/or the District's Ordinances.
6. The permittee shall have complete responsibility for the construction, operation and maintenance of the diversion facility or any other associated facilities and for ensuring compliance with the terms and conditions of the discharge permit/agreement and the District's Ordinances.
7. No later than the commencement of any measurable rainfall, each discharger of urban runoff shall shut off the flow of urban runoff (and accompanying storm water) to the District's sewerage system. The discharge shall not resume until the discharger has obtained written approval for the resumption of the discharge from the District's Urban Runoff Program Manager, or their designate.

8. If the District determines, in its sole discretion, that the dry weather runoff, alone or in conjunction with other discharges, is or may be adversely affecting or threatening to adversely affect the District's collection, treatment and/or disposal facilities, the District shall so notify the permittee who shall immediately cease all such discharge to the sewerage system. The District may, in its sole discretion, allow the continued discharge provided that the permittee installs, operates and maintains additional facilities as determined by the District to be appropriate and/or necessary to ensure that the dry weather runoff does not, alone or in conjunction with other discharges, adversely affect or threaten to adversely affect the District's collection, treatment and/or disposal facilities.
9. Under no circumstances shall District authorization to discharge dry weather urban runoff to the District's sewerage system be deemed to provide a vested right for such discharge.
10. Except as expressly authorized by this policy or a District Ordinance, no urban runoff shall be discharged directly or indirectly into the District's facilities.
11. District reserves its right to amend or clarify this Policy and/or District's Ordinances from time to time, and permittee agrees to abide by such amendments or subsequent enactments."

Section 2: Resolution No. OCSD 01-07 is hereby repealed in its entirety upon the effective date of this Resolution, and the provisions of any Resolution(s) previously adopted by the District that are in direct conflict with the provisions of this Resolution No. OCSD 13-09 are hereby superseded.

Section 3: The General Manager, or his or her designee, is hereby authorized and directed to execute any necessary documents, permits or agreements to effect the policy set forth herein.

Section 4: If any section, subsection, subdivision, sentence, clause, or phrase of this Resolution is for any reason held to be unconstitutional or otherwise invalid, such invalidity shall not affect the validity of the entire Resolution or any of the remaining portions thereof. The Board of Directors hereby declares that it would have passed this Resolution, and each section, subsection, subdivision, sentence, clause, and phrase thereof, irrespective of the fact that any one or more sections, subsections, subdivisions, sentences, clauses, or phrases be declared unconstitutional or otherwise invalid.

Section 5: This Resolution No. OCSD 13-09 shall take effect immediately upon adoption by the Board of Directors.

PASSED AND ADOPTED at a regular meeting held June 26, 2013.

 6/28
Troy Edgar, Chair

ATTEST:

Maria Ayala, Board Secretary

REFERENCES

Wastewater Ordinance, Sanitation District of Los Angeles County, April 1, 1972, as amended July 1, 1998

Health and Safety Code, Division 5. Sanitation [4600-6127], County Sanitation District Act

Supplemental Characterization of Los Angeles County Storm Drain, Sanitation Districts of Los Angeles County, July 2007

Dry-Weather Discharge Treatment Feasibility Study, County of Los Angeles Department of Public Works, Watershed Management Division, July 1, 2003

Service Charge Loadings. Sewage Units and Unit Rates, July 1, 2003 - June 30, 2004, LACSD

Distribution Schedule, Fiscal Year 2012-2013, LACSD

Master Service Charge Ordinance of County Sanitation District No. 2 of Los Angeles County, LACSD

Dry-Weather Urban Runoff Diversion Guidance, County Sanitation Districts of Los Angeles County, July 2, 2009

Amended Joint Administration Agreement, July 1, 1980, LACSD

Amended Joint Outfall Agreement, July 1, 1995, LACSD

Guidelines For the Discharge of Rainwater, Stormwater, Groundwater, and Other Water Discharge, LACSD, February 2013

Dry-Weather Diversion Projects Permitted by LACSD and Fees Paid, LACSD, August 12, 2013

City of Los Angeles Integrated Resources Plan, Volume 3: Runoff Management, July 2004

AB 1892 – Chapter 79, Section 4730.66, Health and Safety Code relating to Sanitation Districts.